Listing of the Claims

1. (Currently Amended) An intravascular stent ~~(50)~~ comprising:

a mesh of electrically conductive material; and

a non-conductive material disposed within the mesh for connecting the mesh in a generally tubular arrangement such that a net current flowing through the mesh is substantially canceled.

2. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 1 wherein the mesh of electrically conductive material comprises a plurality of struts ~~(90)~~ disposed in generally diagonal directions with respect to a central axis of the stent ~~(60)~~.

3. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 2 wherein the non-conductive material comprises a plurality of connector elements ~~(95)~~ for channeling a current ~~(i)~~ through the plurality of struts ~~(90)~~.

4. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 3 wherein the current ~~(i)~~ flowing through the struts ~~(90)~~ is induced by RF signals within an examination region ~~(14)~~ of a magnetic resonance apparatus ~~(10)~~.

5. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 4 wherein the struts ~~(90)~~ and connector elements ~~(95)~~ define a plurality of strut segments ~~(s1, s2, s3, s4)~~, each strut segment having a segment current ~~(i1, i2, i3, i4)~~ associated therewith and the segment currents in adjacent strut segments are equal in magnitude and opposite in polarity.

6. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 1 wherein the conductive mesh comprises a plurality of co-axial loops ~~(110)~~ and a plurality of linking members ~~(120)~~ for connecting the co-axial loops.

7. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 6 wherein the non-conductive material comprises a plurality of insulating nodes ~~(95)~~, the insulating nodes disposed within the conductive mesh whereby a plurality of open circuits are formed in the mesh.

8. (Currently Amended) An intravascular stent ~~(50)~~ as set forth in claim 6 wherein the non-conductive material comprises a plurality of insulating nodes ~~(95)~~, the insulating nodes ~~(95)~~ disposed within the conductive mesh, and the axial loops ~~(110)~~ and linking members ~~(120)~~ connected within the insulating nodes whereby an induced current ~~(i)~~ is channeled through the conductive mesh such that the net current in the stent is substantially minimized.

9. (Currently Amended) A magnetic resonance compatible stent ~~(50)~~ for use in intravascular therapy, the stent comprising:

a plurality of electrically conductive elements arranged in a generally tubular structure; and

at least one non-conductive insulator disposed among the conductive elements for directing a current ~~(i)~~ flowing in the conductive elements such that a net current flowing in the stent is substantially minimized.

10. (Currently Amended) A magnetic resonance compatible stent ~~(50)~~ as set forth in claim 9 wherein the current is induced by RF signals in an examination region ~~(14)~~ of a magnetic resonance apparatus ~~(10)~~.

11. (Currently Amended) A magnetic resonance compatible stent ~~(50)~~ as set forth in claim 10 wherein the conductive elements comprise generally diagonally arranged struts ~~(90)~~ with respect to a central axis ~~(60)~~ of the stent and the at least one non-conductive insulator comprises a plurality of connector elements ~~(95)~~ for directing the current ~~(i)~~ through the struts ~~(90)~~ whereby adjacent segment currents ~~(i1, i2, i3, i4)~~ cancel each other.

12. (Currently Amended) A magnetic resonance compatible stent ~~(50)~~ as set forth in claim 10 wherein:

the conductive elements comprise:

a plurality of loops ~~(110)~~ disposed about a central axis ~~(60)~~ of the stent; and

a plurality of linking members ~~(120)~~ for joining the loops such that the loops and linking members form a generally tubular structure around the central axis of the stent ~~(50)~~; and

the at least one non-conductive insulator comprises a plurality of insulating nodes ~~(95)~~ disposed within the conductive elements to control the current ~~(i)~~ induced in the conductive elements.

13. (Currently Amended) A magnetic resonance compatible stent ~~(50)~~ as set forth in claim 12 wherein the loops ~~(110)~~ and linking members ~~(120)~~ are connected within the insulator nodes ~~(95)~~ whereby currents flowing through adjacent loops ~~(110)~~ substantially cancel each other.

14. (Currently Amended) A magnetic resonance compatible stent ~~(50)~~ comprising:

conducting means for conducting a current ~~(i)~~ in the stent, the current being induced by RF signals from within an examination region ~~(14)~~ of a magnetic resonance apparatus ~~(10)~~; and

non-conducting means for directing the current flowing in the stent such that a net current flowing in the stent is minimized.

15. (Currently Amended) A method of magnetic resonance imaging comprising the steps of:

generating a main magnetic field within an examination region ~~(14)~~;

exciting magnetic resonance in a subject disposed in the examination region by transmitting RF signals into the examination region, the subject having an intravascular stent ~~(50)~~ disposed therein;

spatially encoding the magnetic resonance in the subject via magnetic field gradients;

receiving magnetic resonance signals from the subject;

inducing a current in the intravascular stent from at least one of the transmitted RF signals and the magnetic resonance signals from the subject;

directing the induced current through the stent whereby a net current flowing through the stent is minimized; and

reconstructing the received signals into a magnetic resonance image.

16. (Original) A stent comprising a generally tubular conductive mesh, the mesh being arranged such that currents induced in the mesh during a magnetic resonance examination are substantially cancelled by one another.